What is claimed is:

1. A method for inhibiting proliferation of astrocytes, comprising contacting astrocytes with an amount of CD81 effective to inhibit proliferation of astrocytes.

2. The method of Claim 1, wherein astrocytes are contacted with CD81 by introducing CD81 protein into membranes of the astrocytes.

3. The method of Claim 1, wherein astrocytes are contacted with CD81 by introducing into the astrocytes a nucleic acid encoding CD81, in a manner permitting expression of CD81.

4. The method of Claim 3, wherein the nucleic acid is introduced by a method selected from the group consisting of electroporation, DEAE Dextran transfection, calcium phosphate transfection, cationic liposome fusion, protoplast fusion, creation of an *in vivo* electrical field, DNA-coated microprojectile bombardment, injection with recombinant replication-defective viruses, homologous recombination, *in vivo* gene therapy, *ex vivo* gene therapy, viral vectors, and naked DNA transfer.

5. The method of Claim 1, wherein the contacting is effected *in vivo*.

6. The method of Claim 5, wherein the contacting is effected *in vivo* in a mammal.

7. The method of Claim 6, wherein the mammal is a human.

8. The method of Claim 7, wherein the human has a condition associated with a defect in astrocyte proliferation.

9. The method of Claim 8, wherein the defect in astrocyte proliferation is astrocytosis.

10. The method of Claim 7, wherein astrocytes are contacted with CD81 by introducing CD81 protein into membranes of the astrocytes.

11. The method of Claim 7, wherein astrocytes are contacted with CD81 by introducing into the astrocytes a nucleic acid encoding CD81, in a manner permitting expression of CD81.

12. The method of Claim 11, wherein the nucleic acid is introduced by a method selected from the group consisting of electroporation, DEAE Dextran transfection, calcium phosphate transfection, cationic liposome fusion, protoplast fusion, creation of an *in vivo* electrical field, DNA-coated microprojectile bombardment, injection with recombinant replication-defective viruses, homologous recombination, *in vivo* gene therapy, *ex vivo* gene therapy, viral vectors, and naked DNA transfer.

13. A method for inhibiting proliferation of astrocytic tumor cells, comprising contacting astrocytic tumor cells with an amount of CD81 effective to inhibit proliferation of astrocytic tumor cells.

14. The method of Claim 13, wherein astrocytic tumor cells are contacted with CD81 by introducing CD81 protein into membranes of the astrocytic tumor cells.

15. The method of Claim 13, wherein astrocytic tumor cells are contacted with CD81 by introducing into the astrocytic tumor cells a nucleic acid encoding CD81, in a manner permitting expression of CD81.

16. The method of Claim 15, wherein the nucleic acid is introduced by a method selected from the group consisting of electroporation, DEAE Dextran transfection, calcium phosphate transfection, cationic liposome fusion, protoplast fusion, creation of an *in vivo* electrical field, DNA-coated microprojectile bombardment, injection with recombinant replication-defective viruses, homologous recombination, *in vivo* gene therapy, *ex vivo* gene therapy, viral vectors, and naked DNA transfer.

17. The method of Claim 3, wherein the contacting is effected *in vivo*.

18. The method of Claim 17, wherein the contacting is effected *in vivo* in a mammal.

19. The method of Claim 18, wherein the mammal is a human.

20. The method of Claim 19, wherein the human has a condition associated with proliferation of astrocytic tumor cells.

21. The method of Claim 20, wherein the condition associated with proliferation of astrocytic tumor cells is an astrocytoma.

22. The method of Claim 19, wherein astrocytic tumor cells are contacted with CD81 by introducing CD81 protein into membranes of the astrocytic tumor cells.

23. The method of Claim 19, wherein astrocytic tumor cells are contacted with CD81 by introducing into the astrocytic tumor cells a nucleic acid encoding CD81, in a manner permitting expression of CD81.

24. The method of Claim 23, wherein the nucleic acid is introduced by a method selected from the group consisting of electroporation, DEAE Dextran transfection, calcium phosphate transfection, cationic liposome fusion,

protoplast fusion, creation of an *in vivo* electrical field, DNA-coated microprojectile bombardment, injection with recombinant replication-defective viruses, homologous recombination, *in vivo* gene therapy, *ex vivo* gene therapy, viral vectors, and naked DNA transfer.

25. A method for treating a condition associated with a defect in astrocyte proliferation in a subject in need of treatment, comprising administering to the subject an amount of CD81 effective to treat the condition associated with a defect in astrocyte proliferation.

26. The method of Claim 25, wherein the condition associated with a defect in astrocyte proliferation is astrocytosis.

27. The method of Claim 25, wherein CD81 is administered orally, parenterally, or transdermally.

28. A method for treating a condition associated with proliferation of astrocytic tumor cells in a subject in need of treatment, comprising administering to the subject an amount of CD81 effective to treat the condition associated with proliferation of astrocytic tumor cells.

29. The method of Claim 28, wherein the condition associated with proliferation of astrocytic tumor cells is an astrocytoma.

30. The method of Claim 28, wherein CD81 is administered orally, parenterally, or transdermally.

31. A method for determining whether a subject has an astrocytoma, comprising assaying for CD81 expression a diagnostic sample of cells of astrocytic lineage of the subject, wherein no detection of expression of CD81 in cells of astrocytic lineage of the subject is diagnostic of an astrocytoma.

32. The method of Claim 31, wherein the diagnostic sample of cells of astrocytic lineage of the subject is assayed *in vitro* or *in vivo*.

33. A method for assessing the efficacy of astrocytoma therapy in a subject who has undergone or is undergoing treatment for an astrocytoma, comprising assaying for CD81 expression a diagnostic sample of cells of astrocytic tumor cells of the subject, wherein no detection of expression of CD81 in astrocytic tumor cells of the subject is indicative of unsuccessful astrocytoma therapy.

34. The method of Claim 33, wherein the diagnostic sample of cells of astrocytic lineage of the subject is assayed *in vitro* or *in vivo*.